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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/810,122 | 03/29/2004 | Thomas R. Kruer | 1819-4 | 8054 |

7590

08/22/2005

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| EXAMINER |
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BROWN, JAYME L

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| ART UNIT | PAPER NUMBER |
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1733

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,122

Applicant(s)

KRUER ET AL.

Examiner

Jayme L. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-37 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 29-37 is/are rejected.
7) ☒ Claim(s) 29 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 10/6/03 with the parent application (10/439,416) has been considered by the examiner. However, a copy of the IDS must be submitted for this application if it is desired to have the references appear on the face of the patent.

Specification

2. The disclosure is objected to because of the following informalities:

On page 23, paragraph [0092], item 100 is referred to as "a diameter" and on page 24, paragraph [0098], item 100 is referred to as "the outer edge". It is recommended that applicant keep the reference to the item number consistent in the Specification and therefore should clarify what item 100 should be referred to.

On page 17, paragraph [0071], it is recommended that "48" be in bold print, along with "20h" on page 24, paragraph [0099] in order to keep consistent throughout the Specification.

Appropriate correction is required.

Claim Objections

3. Claim 29 is objected to because of the following informalities:

In line 4 of claim 29, the word - - material - - should be added after "second polymeric" in order to keep consistent throughout the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 31, it is unclear as to if the second polymeric material layer is also being extruded or if the first and second polymeric material layers just have the same melting temperature. Clarification is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 29 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinur et al. (DE 4408556) in view of Kannankeril et al. (U.S. Pub. 2003/0037858), and Kennedy (U.S. Patent 6,509,085).

Regarding claim 29, Dinur et al. teaches a ground-covering/irrigation means (unitized mat to facilitate plant growth) that is made of plastic, arranged over the soil, configured to allow for plants to grow through the holes therein, and has a water duct or line that is connected to a plurality of pressure-reducing elements (Figure 1; Abstract).

Dinur et al. is silent toward the claimed method of making the unitized mat. One skilled in the art would have readily appreciated making the mat in the claimed method, since it is a conventional way to make a mat as shown by Kannankeril et al. and Kennedy.

Kannankeril et al. is directed toward making laminated film articles that have inflatable chambers and channels. Kannankeril et al. teaches extruding a first polymeric material layer, laminating a second polymeric layer to said first polymeric layer, and selectively bonding (by heat sealing) said first and second polymeric material layers so as to create fluid conveying passageways between said first and second polymeric material layers defined by bonded and non-bonded areas (Page 1, paragraphs [0001], [0006] – [0007], [0010] – [0011]; Page 2, paragraph [0029]; Figure 13).

Kennedy is directed to a laminate having microfluidic structures disposed between the sheets of the laminate. Kennedy teaches extruding a first polymeric layer (510) (Column 15, lines 41-44), laminating a second polymeric layer (505) to said first polymeric layer, and selectively bonding said first and second polymeric material layers so as to create fluid conveying passageways between said first and second polymeric material layers defined by bonded and non-bonded areas (Column 3, lines 43-55; Figure 5).

In conclusion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce the unitized mat of Dinur et al. by the methods suggested by Kannakeril et al. and Kennedy, i.e. extruding a first polymeric material layer, laminating a second polymeric material layer to the first and selectively bonding so as to create fluid conveying passageways, since these are conventional ways to make a mat.

Regarding claim 35, Dinur et al. and Kannankeril et al. are relied upon for the teachings above. Kannankeril et al. also teaches introducing a pressurized fluid within the non-bonded area to inflate and open the fluid conveying passageways prior to use (Page 1, paragraph [0007]; page 2, paragraph [0029]).

Regarding claim 36, Dinur et al. and Kennedy are relied upon for the teachings above. Dinur is silent toward the claimed method steps for producing the unitized mat. One skilled in the art would have readily appreciated making the mat in the claimed method, since it is a conventional way to make a mat as shown by Kennedy.

Kennedy teaches extruding a first polymeric material layer (Column 15, lines 41-44), selectively printing adhesive on said first polymeric material layer, and laminating a second polymeric material layer to said first polymeric material layer to create fluid conveying passageways between said first and second polymeric material layers defined by bonding and non-bonded areas (Column 3, lines 43-55; Column 4, lines 39-49; Figure 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce the unitized mat of Dinur et al. by the method of

Kennedy, i.e. extruding a first polymeric material layer, laminating a second polymeric material layer to the first and selectively bonding so as to create fluid conveying passageways, since it is a known and conventional way to make a mat.

Regarding claim 37, Dinur et al., Kannankeril et al., and Kennedy are relied upon for the teachings above. Dinur et al. and Kennedy are silent toward introducing a pressurized fluid within the non-bonded area to inflate and open the fluid conveying passageways prior to use.

Kannakeril et al. teaches introducing a pressurized fluid within the non-bonded area to inflate and open the fluid conveying passageways prior to use (Page 1, paragraph [0007]; page 2, paragraph [0029]).

One skilled in the art would have readily appreciated introducing a pressurized fluid to inflate and open the passageways prior to use to make sure that they are clear of any debris and to make sure that the passageways don't collapse. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the mat of Dinur et al. by introducing a pressurized fluid to the passageways prior to use in the method of Kennedy, as suggested by Kannankeril et al.

8. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinur et al. (DE 4408556) in view of Kannankeril et al. (U.S. Pub. 2003/0037858), and Kennedy (U.S. Patent 6,509,085), as applied to claims 29 and 35-37 above, and further in view of Gilead (4,126,998).

Regarding claims 30 and 31, Dinur et al., Kannankeril et al., and Kennedy are relied upon for the teachings above. Kannankeril et al. also teaches that the first and second polymeric material layers are extruded approximately at melting temperature (Page 1, paragraph [0010]), as does Kennedy (Column 15, lines 41-44).

Dinur et al. is silent toward the method including vacuum forming fluid conveying passageways into said first polymeric material layer. Dinur et al. is also silent toward performing the steps of vacuum forming and selectively bonding after the step of extruding approximately at melting temperature of the first and second polymeric layers.

Gilead is directed to a drip irrigation apparatus. Gilead teaches making this apparatus by laminating a first (22) and second (20) polymeric material layer (thermoplastic sheet) and then selectively bonding (by heat sealing) said first and second polymeric material layers so as to create fluid conveying passageways between said first and second polymeric material layers defined by bonded (touching surfaces) and non-bonded areas (Column 1, lines 12-36 Column 2, lines 3-14); Figures 5a, 5b, and 6). Gilead also teaches vacuum forming fluid conveying passageways into said first polymeric material layer (Column 2, lines 3-14). Gilead also teaches vacuum forming fluid conveying passageways into said first polymeric material layer (Column 2, lines 3-14).

One skilled in the art would have readily appreciated vacuum forming the passageways as it is a well known and conventional method. One skilled in the art would have also readily recognize that an option for the sequence of steps of the method is to have the vacuum forming and bonding after the extrusion step. Therefore,

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it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce the unitized mat of Dinur et al. by vacuum forming the passageways in the methods of Kannankeril et al. or Kennedy, as suggested by Gilead, and bonding the layers before the extrusion step.

9. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinur et al. (DE 4408556) in view of Kannankeril et al. (U.S. Pub. 2003/0037858), and Kennedy (U.S. Patent 6,509,085), as applied to claims 29 and 35-37 above, and further in view of Rich et al (6,440,254).

Regarding claims 32 and 33, Dinur et al., Kannankeril et al., and Kennedy are relied upon for the teaching above. Dinur et al. is silent toward the step of selectively bonding the polymeric material layers comprising laser bonding the polymeric material layers together with a plurality of lasers.

Rich et al. teaches bonding a layer of material to a substrate using a laser beam. The substrate and the layer could be a number of materials including polymers. The heat generated by the laser beam can also release a gas or vapor that can be trapped beneath the top layer and cause it to puff away from the substrate (Column 3, lines 25-27 and 41-54; Column 4, lines 7-17 and 41-46; Figure 3).

One skilled in the art would have readily appreciated using a laser bonding to bond the polymeric material layers together since it is a known and conventional bonding method. One skilled in the art would also have readily recognized that using a plurality of lasers would speed up the bonding process. Therefore, it would have been

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obvious to one of ordinary skill in the art at the time the invention was made to produce the mat of Dinur et al. by using laser bonding with a plurality of lasers in the method of Kannankeril et al., as suggested by Rich et al. since it is an alternative method of bonding that will produce the same result.

Regarding claim 34, Dinur et al. and Kannankeril et al. are relied upon for the teachings above. Kannankeril et al. also teaches introducing a pressurized fluid within the non-bonded area to inflate and open the fluid conveying passageways prior to use (Page 1, paragraph [0007]; page 2, paragraph [0029]).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jayme L. Brown** whose telephone number is **571-272-8386**. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jayme L. Brown

Jayme L. Brown

John T. Haran
JOHN T. HARAN
PRIMARY EXAMINER